



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,650	12/01/2003	Zer Kai Yap	TEC1327	2316

832 7590 01/11/2005

BAKER & DANIELS  
111 E. WAYNE STREET  
SUITE 800  
FORT WAYNE, IN 46802

EXAMINER

JIANG, CHEN WEN

ART UNIT	PAPER NUMBER
----------	--------------

3744

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/724,650		YAP, ZER KAI	
	<b>Examiner</b>		<b>Art Unit</b>	
	Chen-Wen Jiang		3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20031201</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,5,6,7,8,9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (JP 04254154) in view of Teagan (U.S. Patent Number 4,474,018).

In regard to claims 1,6 and 8, Yoshida et al. disclose a heat storage device. The device comprises a water storage vessel 11, a first heat exchanger 2, a second heat exchanger 4, a first compression mechanism 1, a second compression mechanism 3, an expansion device 5, pressure reduce valve 8 and an evaporator 6. The first heat exchanger 2 is disposed between the first compression mechanism 1 and the second compression mechanism 3. The second heat exchanger 4 is disposed between the second compression mechanism 3 and the expansion device 5. Yoshida et al. disclose the direct heat transfer between the water storage and the refrigerant. However, Yoshida et al. do not disclose water circuit to transfer the heat. Teagan discloses a water storage vessel 6 with a water circuit 8,16 and pump 10 in the same field of endeavor for the purpose of transfer heat. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Yoshida et al. with a water storage vessel with a water circuit in view of Teagan so as to transfer heat. In regard to claim 5, carbon dioxide is a well-known refrigerant and the refrigerant condition has no impact in the apparatus claim. In regard to claim 7, the arrangement of each component is a design

Art Unit: 3744

choice and not patentable. In regard to claims 9 and 10, under the principals of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device.

When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. *In re King*, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986).

3. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (JP 04254154) in view of Teagan (U.S. Patent Number 4,474,018).

The addition of duplicate parts to the apparatus is not the type of innovation for a patent to be granted. *St. Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977).

4. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. and Teagan as applied to claim 1 above, and further in view of Thompson (U.S. Patent Number 6,729,151 equivalent to WO 01/22011 (3/29/2001)).

Yoshida et al. and Teagan discloses the invention substantially as claimed. However, Yoshida et al. and Teagan does not disclose internal heat exchanger. Thompson discloses the internal heat exchanger in the same field of endeavor for the purpose of increase efficiency. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Yoshida et al. and Teagan with a internal heat exchanger in view of Thompson so as to improve efficiency.

*Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takizawa et al. (JP 2003074997) is made of record as supercritical refrigerant unit to generate hot water.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chen-Wen Jiang whose telephone number is (571) 272-4809. The examiner can normally be reached on Tuesday-Friday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on (571) 272-4808. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chen-Wen Jiang  
Primary Examiner

